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ABSTRACT

The reliability and validity of the Teaching Behaviours Scale (TBS) were examined using a sample of 40 male and female student teachers. The TBS was designed as a self-administered rating scale to evaluate one's teaching effectiveness. The five-point rating scale contains 22 items covering six categories: reinforcement, feedback, presentation, consolidation, evaluation, and management. To investigate test validity, four criterion measures were administered: teacher locus of control, educational attitudes scale, attitude toward change and attitude toward responsibility. Fourteen of the 22 items successfully differentiated between high- and low-scoring subjects. For the entire scale, a Cronbach's alpha of .73 was obtained, indicating acceptable internal consistency reliability. Each subscale, although short in length, had acceptable reliabilities. Results also suggested that the subscales were relatively independent. Correlations between TBS scores and each of the four criterion measures ranged from .51 to .81, supporting its construct validity. (GDC)

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OCCASIONAL PAPER no.35

Teaching Behaviours Scale: Its Reliability and Validity

by

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PREFACE

Teaching is a highly complex activity. It entails a very wide range of skills. However, such skills are somewhat related to one another and can therefore be grouped in terms of several aspects, as previous research has shown. Thus, for effective teaching, it will be useful for teachers, and especially student-teachers, to reflect on their own teaching behaviours. For this, a self-rating scale dealing with the essential teaching skills should prove helpful.

The Teaching Behaviours Scale was first published in 1985 as on Occasional Paper and has been subsequently released in the USA by the Educational Resources Information Centre (ERIC) as a microfiche (ED 256 199). The present study reports further evidence of its reliability and validity.

It is hoped that student-teachers and their supervisors will find the scale of some use in providing a common framework for evaluating teaching skills. Needless to say,the Scale can also be used for postgraduate and staff research.

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TEACHING BEHAVIOURS SCALE: ITS RELIABILITY AND VALIDITY

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There are several sources from which a teacher can obtain feedback information of her own teaching behaviours: supervisors, peers, students, and of course the teacher herself. Such information may be secured with or without mechanical help such as the use of audio-or video-recording. The information may pertain to an extended period of teaching and cover a wide range of teaching behaviours that are usually found in supervisor evaluation in a natural teaching environment. Or, it may be specific to a very short duration and deal with limited, specific teaching skills that are normally found in microteaching situations.

It is a truism that unless and until a person sees his current behaviour as non-effective, then only he will change it. This implies the need to guide the teacher in reflecting on her own teaching behaviours. It might not be an over-statement that underlying all forms of teacher evaluation is the teacher's self-evaluation.

Research on teacher self-evaluation is rather limited. Some studies have shown a very low correlation of teachers' self-ratings with peer and student ratings. However, self-ratings seem to be useful when used in conjunction with other types of data such as student ratings and achievement, classroom observation, and videotape

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feedback (Carroll, 1981). One weakness of self-evaluation is the 'leniency error' (Mabe & West, 1982; Steele & Ovalle, 1984). But, when self-evaluation was anchored on behavioural observation rather than general ratings of performance qualities, there was greater objectivity (Meyer, 1980).

The Teaching Behaviours Scale (Soh, 1985) studied here was designed such that a student-teacher can use it as a guide to reflect and self-rate the frequency with which she has practised certain teaching behaviours that are believed to be important in the classroom. These include teaching behaviours that may elicit, reinforce and consolidate pupil learning as well as those allowing pupil freedom in class. It is expected that student-teachers who score higher on this scale will have a stronger belief in their own efficacy in influencing pupil learning and behaviour. Such student-teachers are also expected to hold more progressive, child-oriented views of education.

METHOD

Subjects

Forty student-teachers (7 males and 33 females) were contacted through their teaching practice supervisors for voluntary participation in this study. These student-teachers were mainly (95.0%) A-Level General Certificate of Education holders (i.e., high school graduates) who were being prepared for teaching various subjects in primary schools. At the time of data collection, they had just completed the second block of teaching practice for a period of ten weeks. At that time, these student-teachers were in the last term of a two-year teacher education programme.

Measures

Teaching Behaviours Scale. This scale consists of 22 five-point items for the student-teachers to report the frequency with which she has demonstrated each teaching behaviour. The items fall into six broad categories:

Category	No. of Items	Sample Item
Reinforcement	4	Praise pupils for giving fully correct answers.
Feedback	4	Tell the class as a whole how they have performed in a test or an assignment.
Presentation	4	Use a mixture of 'telling' and questioning when explaining.
Consolidation	4	Towards the end of a lesson, ask a few questions to help pupils recapitulate.
Evaluation	3	Show pupils where they have gone wrong in their work.
Management	3	Allow pupils to choose whom they like to sit with.

In an earlier study (Soh, 1985) involving 80 male and female teachers from both primary and secondary schools, a Cronbach's alpha of .80 was obtained for the Teaching Behaviours Scale as a whole. Item discriminations in terms of point-biserial correlations vary from .20 to .47, with .33 as the median. Significant ($p<.05$, one-tailed) correlations were obtained with criterion measures: locus of control (.23), educational attitude (.34), attitude towards change (.35), and attitude towards responsibility (.29).

Teacher Locus of Control. This and the three scales described below served as the criterion measures for checking on the validity of

the Teaching Behaviours Scale. The Teacher Locus of Control Scale was recently developed to measure teachers' generalized expectancy of own control over pupil behaviour and performance as well as classroom events (Taylor et al., 1981). Reliabilities reported vary from .58 to .81 (Sadowski et al., 1981, Sadowski and Woodward, 1983; Taylor et al., 1981). Singapore studies reported a Cronbach alpha of .71 (Soh, 1984) and significant correlations with negative measures of teacher stress (Soh, 1986).

Educational Attitude Scale. This consists of 20 Likert-type items. Agreements with the statements denote a more progressive, open, and learner-oriented view of education. The items deal with four important aspects of school life (children, discipline, methods, and administration). Reliabilities of .36 to .79 have been reported (Soh, 1973, 1974, 1982, 1984 and 1985) for the whole scale. Validity of this scale is evidenced by its correlations with an adapted version of Rokeach's Dogmatism Scale (Rokeach, 1960; Soh 1974 and 1982) and the Teacher Locus of Control Scale (Taylor et al., 1981; Soh, 1984).

Change Scale. The 20 items of this scale are also in five-point Likert format and measure the teacher's acceptance of changes in life as normal happenings and feelings toward change as enriching life experience. In an earlier study (Soh, 1985), point-biserial correlations, as indices of discrimination, vary from .29 to .68 with a median of .48. A Cronbach's alpha of .89 was obtained.

Responsibility Scale. This scale has its items presented in five-point Likert format. They purportedly measure the teacher's sense of responsibility, willingness to take on additional, new

duties, and their perception of being assigned duties. Item discriminations in terms of point-biserial correlations vary from .23 to .65, with a median of .41 and the Cronbach's alpha of .79 was obtained (Soh, 1985).

RESULTS

The first step in validating a test is to evaluate its discrimination power. In this study, this was done by forming high and low scoring groups with reference to the total scores. For each item, the t-test was then applied to compare the item means of highs and lows; then, the corresponding point-biserial correlations were calculated. The results are shown in Table 1 for the 22 item of the Teaching Behaviours Scale.

As shown in Table 1, there are 14 items with a significant t-ratio and point-biserial correlation ($p<.05$, one-tailed). This indicates that near two-third of the 22 item were able to successfully differentiate between high and low scoring subjects. For the scale as a whole, a Cronbach's alpha of .73 was obtained, indicating the scale to have acceptable reliability in terms of internal consistency.

Table 1

As the 22 items dealt with six different though probably related aspects of classroom teaching, a group of 3 or 4 items for the same aspect was treated as a subscale. The reliabilities of and the relationships among the six subscales were also looked into.

As shown in Table 2, the Cronbach's alphas vary from .37 to .59, with a median of .48. In view of the rather short length of 3 or 4 items per subscale, the six subscales showed acceptable reliabilities. The subscale Consolidation has a significant correlation with Feedback (.30), Presentation (.35) and Evaluation (.31). Also, Presentation correlated significantly with Feedback (.29). On the whole, the intercorrelations are negligible or low, suggesting that the six subscales were relatively independent.

Table 2

Finally, the validity of the scale was investigated. This was done by studying its correlations with four attitudinal measures. In other words, construct validity was ascertained of the Teaching Behaviours Scale.

The four criterion attitudinal measures were described earlier. For the present study, the Cronbach's alphas are .56 for Teacher Locus of Control, .54 for Educational Attitude, .48 for Change, and .77 for Responsibility. And, as shown in Table 3, Teaching Behaviours Scale significantly correlated as expected with Teachers Locus of Control (.51), Educational Attitude (.81), Change (.79), and Responsibility (.73).

Table 3

CONCLUSION

This study set out to evaluate the reliability and validity of a recently developed scale for teaching behaviours. The response of a group of student-teachers completing this two-year teacher education programme indicates that the scale has acceptable internal consistency reliability and construct validity. Thus, the scale could prove itself useful as an instrument for self-evaluation by student-teachers in consultation with their supervisors.

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Table 1 - Teaching Behaviours Scale: Items, t-values and Point-Biserial Correlations

	Scale Item	t-value	Point-biserial r's
1	Praise pupils for giving fully correct answers.	2.35*	.36*
2	Praise pupils for giving partially correct answers.	1.82*	.28*
3	Praise pupils for answering questions, even if the answers are totally incorrect.	1.02	.16
4	Encourage pupils to answer questions even if they have some difficulties in doing so.	2.13*	.33*
5	Tell the class as a whole how they have performed in a test or an assignment.	.43	.07
6	Explain to the class the correct answers of the questions.	2.47*	.37*
7	Tell the class clearly what the lesson is about at the beginning of the lesson.	2.34*	.35*
8	Tell the class which pupils have made progress even though the results may not be good.	.78	.13
9	Use a mixture of 'telling' and questioning when explaining.	.77	.12
10	List the main points of the lesson as you teach.	3.33*	.48*
11	Use teaching aids to help in explaining.	2.19*	.33*
12	Having explained something, ask questions about it immediately.	.86	.14

	Scale Item	t-value	Point-biserial r's
13	Towards the end of a lesson, ask a few questions to help pupils recapitulate.	2.01*	.31*
14	Ask questions to help pupils put into use what they have just learned in the lesson.	1.92*	.30*
15	Set exercise or homework which caters to a range of abilities.	3.29*	.47*
16	Allow flexibility in the amount and scope of exercise or homework.	3.07*	.45*
17	Show pupils where they have gone wrong in their work.	2.85*	.42*
18	Help pupils discover where they have gone wrong.	3.35*	.48*
19	Give credit to pupils' work even if they are not exactly what is expected.	.56	.09
20	Allow pupils to choose whom they like to sit with.	1.44	.23
21	Allow pupils to choose whom they like to work together with.	3.98*	.54*
22	Allow pupils to move about when the class is at work.	-.31	.05

Note: Cronbach's alpha = .73
* $p < .05$ (one-tailed)

Table 2 - Teaching Behaviours Subscales: Means, Standard Deviations, Intercorrelations and Reliabilities

Subscale		Item Nos.	Possible Maximum	Mean	S.D.	Cronbach's alpha	Intercorrelations					
							R	F	P	C	E	M
Reinforcement	R	1-4	20	15.43	2.11	.59	1.00					
Feedback	F	5-8	20	16.80	2.01	.38	.23	1.00				
Presentation	P	9-12	20	16.30	1.91	.44	.15	.29*	1.00			
Consolidation	C	13-16	20	15.32	2.44	.59	.10	.30*	.35*	1.00		
Evaluation	E	17-19	15	12.05	1.45	.37	.21	.09	-.10	.31*	1.00	
Management	M	20-22	15	6.43	2.42	.53	.20	.15	.05	.13	.08	1.00

* $p < .05$ (one-tailed test)

Table 3 - Correlations Between Teaching Behaviours Scale and Criterion Measures

Criterion Measure	Correlations with Teaching Behaviours Scale
Teacher Locus of Control	.51*
Educational Attitude	.81*
Attitude toward Change	.79*
Attitude toward Responsibilty	.73*

* $p<.05$ (one-tailed test).

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